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The Assumption of Ordinariness as a Denial Mechanism

Innovation and Conflict in a Coal Mine*

This paper describes and analyzes an episode in an action-research project undertaken by the Tavistock Institute of Human Relations in the British coal-mining industry that continued, with interruptions, for eight years during the 1950s. It shows how what Bion (1961) called the “hatred of learning through experience” all but defeated an innovative collaborative endeavor by occasioning conflicts in which management and labor regressed to traditional adversarial positions.

The innovation in question introduced a new form of work organization, known as “composite working.” This occurred spontaneously in three different coalfields and heralded what Emery (1978) has called a “new paradigm of work.” It offers an alternative to technocratic bureaucracy in which self-regulating, multi-skilled work groups become building blocks for a more democratic and efficient organizational form. In so doing it rejects the technological imperative and seeks to find the best match between, or, in systems language, the joint optimization of, the social and technical system. It has therefore become known as the “socio-technical” approach. Under suitable conditions it leads to higher productivity and higher job satisfaction than conventional work systems.

The socio-technical approach has now made some headway in all western industrialized countries, but against enormous resistance. This fact is not surprising, as it runs counter to long-held beliefs about how work should be organized (Trist et al., 1963) and disturbs the socially structured psychological defenses (Jaques, 1953) that managers and workers alike have built up to adapt

*A shortened and rewritten version of chapters 19–22 in Trist et al., *Organizational Choice*. London: Tavistock Publications, 1963.

to conventional organizational forms. These constitute key elements in their identity (Holland, 1985).

The colliery was a village pit on which the community was totally dependent. The National Coal Board had already threatened to close it, but closure had been averted by a major organizational innovation in one of the seams—the Manley—which for the first time introduced composite working into semi-mechanized longwalls, then the prevailing form of mining.

The success of the Manley innovation was phenomenal—in productivity, quality of output and operating costs. It was no less so as regards earnings and work satisfaction, and in relationships among teams and between labor and management. There was virtually no voluntary absenteeism and accidents and sickness were halved. A major factor in this success was that component groups, which were self-selected, had previously worked together on “short-walls”—a pre-longwall technology in which composite working was traditional.

Narrative

THE CHARACTER OF THE DRIFT

The episode now to be described reports the course of events in the opening up of a new production unit in an old colliery. In its early life the geological conditions were difficult in the extreme and in the team, which was a new group put together for extraneous reasons, the majority had no previous experience of the technology or the method of working. Geological and socio-psychological circumstances aggravated each other.

The unit or panel comprised the first two faces of a new drift—a tunnel sloping down from the surface to the coal area. Work began, therefore, near the outcrop, a major factor in creating difficult mining conditions, which improved when the faces got farther in and cover became more substantial. Coal height was 28", above which were 4" of ramble (loose stone). The panel consisted of two 80-yard longwall faces, east and west of a main roadway. Face conveyor belts fed onto a main conveyor which discharged into a hopper from which tubs were filled. Face supports were wooden props and steel straps, with collapsible steel chocks which reinforced the roof support system. This was the customary set-up before faces became completely mechanized. The coal was won by pneumatic picks rather than undercut by electrical coal cutters as it was on the Manley. This put a premium on hewing experience and skill which varied widely among faceworkers.

The drift was separate from the other workings of the colliery and the double

unit was a new enterprise expected to produce coal equal to 25 percent of the previous output of the whole mine, whose life it would considerably extend. The venture was based on the very imperfect understandings of the Manley innovation, a main cause of the nearly complete failure which occurred.

A complement of 51 faceworkers was planned with six spare men to provide substitutes in case of absences. The hewing task, carried out over one or two shifts, embraces breaking coal from the face with pneumatic picks, filling it onto the face conveyor and setting roof supports as the face is cleared. The "hewers" are followed on the next shift by the "pullers" who advance the face conveyors and the steel chocks. At the same time the "stonemen" enlarge and advance the three roadways (tunnels) between and at the end of the faces on the panel.

In composite working all team members are multi-skilled (in this case in hewing, pulling and stonework); they can thus exchange shifts and practice task continuity (deploying themselves as necessary to carry on with succeeding tasks); they share equally in a common pay note. Teams are self-regulating and practice what we called "responsible autonomy" (Trist and Bamforth, 1951).

Both management and men expected "teething troubles," but it was hoped that the advantages of composite working would begin to be realized within a few weeks. No-one expected the teething troubles to last seven months, or that eleven months would elapse before the planned level of output was regularly maintained.

One of the conditions of the composite agreement was that the men should make themselves up into sets of the required number. In the present case this condition was waived by both management and lodge (trade union local branch). The colliery was in process of reorganization and a number of underground workers were becoming redundant. Management and lodge agreed to draft these men into the new team, together with those who had been engaged on the development of the drift.

A meeting of the team was held by the lodge a few days before the start to acquaint the men with the agreement, to allocate them provisionally to tasks and shifts, and to appoint team captains for different task groups. Eight men volunteered for pulling and ten for stonework, the remaining 33 being allocated to hewing. Three team captains were elected. Several men expressed anxiety lest they were condemning themselves to permanent nightshift and received assurance that after a week or two it would be possible to start rotating shifts.

Representatives of the lodge, together with the three team captains, then met with management to agree on final details. Although there had been a vague expectation that three shifts would be worked, it was decided to have only two, concentrating coal-getting on the dayshift (9 a.m.–4:30 p.m.) and doing pulling and stonework on the nightshift (4:30 p.m.–midnight). The 33